USDA Forest Service
OKANOGAN - WENATCHEE NATIONAL FORESTS
Methow Valley Ranger District

DOUGLAS-FIR TUSSOCK MOTH PROJECT - 2001

An outbreak of Douglas-fir tussock moth is threatening forest resources on portions of the Methow Valley Ranger District. A decision was made by the Regional Forester in spring 2000 to protect specific areas of concern where surveys determine that heavy defoliation by tussock moth will likely cause unacceptable impacts. This leaflet provides information about the project.

Douglas-fir Tussock Moth **-** Tussock moths damage trees by eating their needles and are a major defoliator of fir forests in western North America. Douglas-fir and true firs are the tussock moths preferred food source: however, the insect will feed on other tree species when it has eaten all the fir needles available. The caterpillar, or larval stage of the insect, does all the feeding; the moths do not feed. Larvae reach a length of about 1.25 inches, are very colorful and have tufts of long hairs.

The tussock moth is a native inhabitant of fir forests in Eastern Oregon and Washington. Tussock moth populations are cyclic, with an increase in population every 7 to 13 years. Each outbreak lasts 2 to 4 years and ends with a sudden crash. The outbreaks usually occur in mature and over-mature multi-story stands with a high density of host trees; trees on ridge tops and south facing slopes are the most vulnerable. A very large number of larvae can completely strip trees of all their foliage within a few weeks. Trees without their needles are more susceptible to attack by other insect pests, particularly bark beetles, and increase the risk and severity of fires.

Because of an outbreak in the early 1970s, the United States Department of Agriculture initiated a program to research the moth. The objective was to better anticipate future outbreaks and to develop management options. One result of this program was a survey technique, the "Douglas-fir Tussock Moth Early Warning System", which monitors population trends. According to data from this "early warning" monitoring, tussock moth populations have been increasing. The anticipated outbreak is expected to occur primarily in the years 2000-2002 and could last through 2004 in the Pacific Northwest.

In many places, the tussock moth can act as a natural disturbance agent by reducing overstocking and creating stand openings. However, defoliation in some areas would cause unacceptable harm to fish and wildlife habitat (including species federally listed as threatened or endangered) or to areas where people live, recreate and work.

The Final Environmental Impact Statement for the tussock moth project analyzed short-term management strategies that would maintain existing vegetative conditions in specific areas and would protect specific resources until long-term management actions restore a more balanced forest condition over the landscape. It is not the intent of this project to stop or prevent the overall tussock moth outbreak, or to prevent defoliation over the entire area where the outbreak may occur.

Insecticide - Aerial application of TM-BioControl-1 will be used to protect specific areas of concern from defoliation. TM- BioControl-1 is an insecticide made from a natural virus of the tussock moth. This virus is the primary cause of the collapse of Douglas-fir tussock moth outbreaks under natural conditions. This virus is specific only to Douglas-fir tussock moth and two other species of tussock moth in the western US.

Exposure to the Douglas-fir tussock moth larvae can cause effects on humans. About one third of the people who come in contact with the hairs of tussock moth larvae have an allergic reaction of skin, eye, and

respiratory tract irritation. People who are sensitive or allergic to other insects tend to be more sensitive to the tussock moth larvae. These effects are not life threatening or debilitating and are reversible. Exposure to TM-BioControl-1 may also cause some of the same symptoms, but at much lower risk. First aid treatment includes flushing with a stream of water or washing thoroughly with soap and water.

Treatment Criteria - Application of TM-BioControl-1 will occur only after sampling has confirmed the presence of treatable populations of tussock moth larvae and that they are in a stage of development most vulnerable to treatment. TM-BioControl-1 will be applied by helicopter. Generally, spray operations will occur between 5 a.m. and 7 a.m. each day, but may last longer if weather conditions permit. Weather conditions include wind between 1 and 8 MPH, relative humidity more than 50 percent and a temperature between 34 and 70 degrees.

Project location - The project area includes about 30,000 acres on the Methow Valley Ranger District, including areas near Mazama, along the North Cascades Scenic Highway (State Route 20), the Eightmile/Chewuch drainage, and a small area in the Wolf Creek drainage outside of the Lake Chelan-Sawtooth Wilderness. Actual acres sprayed for the Tussock Moth could be less than the amount above.

The area to be treated has been divided into about 175 individual spray blocks. Treatment for each block depends on weather conditions, elevation and tussock moth larval development and will be determined about 2 days before spraying. Notices will be posted at campgrounds and along roads and public contact will be made daily within the treatment area. All treatment will be on National Forest System lands.

Staffing **-** Approximately 70 people will be working at Winthrop WA. Some entomology crews will begin working May 7th, surveying the tussock moth population. These crews will continue working through the entire project monitoring population levels. Additional people will be assigned to the project when application begins, some only for a few days. Forest Service employees, local temporary hires, and contactor personnel will work together to complete the project.

Contractor - TM-Biocontrol-1 will be applied with a helicopter by a private contractor under the supervision of the Forest Service. Heli-Jet Corporation headquartered in Eugene, Oregon has been awarded the contract. They have conducted similar projects throughout the United States. They will operate from a helibase near Winthrop, and from other temporary spots in the project area.

Project Schedule - Application of TM-BioControl-1 will begin in mid June and end in early July. An approximate schedule of key events is listed below. This schedule is subject to change due to weather and larval development.

- May 7 - Crews begin monitoring insect population levels.
- mid June - First spray blocks released and application begins.
- mid July - Tentative completion of application.
- mid to late July - Crews monitor effectiveness of treatment.
- mid August - Tentative end of project.

Other Activities – At the same time the Forest Service is conducting this project, private landowners in the upper Methow may be spraying the same insecticide on their lands. Those landowners are working with the Washington State Department of Natural Resources to spray about 1600 acres. Although they will be operating at about the same time, and may use the same contract applicator, this effort is completely separate from the Forest Service project.

Project headquarters - The tussock moth project is operating out of the Winthrop Work Center in Winthrop. If you are interested in more information about the project, contact the Forest Service at the number below:

Winthrop: Wayne Kleckner, Project Manager Jim Archambeault, Information Officer
509-996-2832